

Claims

1. An enzyme derived from an actinomycete of the genus *Streptomyces*, which is capable of degrading a polyhydroxyalkanoate resin, having a molecular weight between approximately 47,000 to 56,000, having an optimum pH between 4 and 10, and having an optimum temperature between 40°C and 55°C.
2. The enzyme according to claim 1, which is inductively produced by polyhydroxyalkanoate, hydroxybutyric acid, polyhydroxybutyrate, and/or hydroxybutyric acid ester.
3. The enzyme according to claim 1 or 2, wherein the actinomycete of the genus *Streptomyces* is *Streptomyces thermovulgaris*, *Streptomyces thermoolivaceus*, *Streptomyces thermohygroscopicus*, or *Streptomyces thermocarboxydovorans*.
4. The enzyme according to claim 1 or 2, wherein the actinomycete of the genus *Streptomyces* is a microorganism deposited under accession No. FERM P-19578.
5. A method for degrading a polyhydroxyalkanoate resin, which comprises causing the polyhydroxyalkanoate resin to come into contact with the enzyme according to any one of claims 1 to 4 so as to cause the resin to react with the enzyme.
6. A method for degrading a polyhydroxyalkanoate resin, which comprises causing the polyhydroxyalkanoate resin to come into contact with an actinomycete of the genus *Streptomyces* so as to cause the resin to react with the actinomycete at 40°C to 55°C.
7. The method according to claim 6, wherein the actinomycete of the genus *Streptomyces* is *Streptomyces thermovulgaris*, *Streptomyces thermoolivaceus*, *Streptomyces thermohygroscopicus*, or *Streptomyces thermocarboxydovorans*.
8. The method according to claim 6, wherein the actinomycete of the genus *Streptomyces* is a microorganism deposited under accession No. FERM P-19578.
9. An actinomycete of the genus *Streptomyces*, which is capable of degrading a polyhydroxyalkanoate resin and is a microorganism deposited under accession No.

FERM P-19578.